REMARKS/ARGUMENTS

Claims 3 and 4 are pending in this application. By this Amendment, Applicant CANCELS claims 1 and 2 and ADDS claims 3 and 4.

Applicant appreciates the Examiner extending the courtesy of the personal interview on November 14, 2007. During the personal interview, Applicant's representative and the Examiner discussed whether or not pending claims 1 and 2, drawn to a sound signal, were statutory under 35 U.S.C. § 101 in view of *In re Nuijten*. Without conceding that claims 1 and 2 were nonstatutory, Applicant has submitted new claims 3 and 4 drawn to an apparatus. Also during the personal interview, Applicant's representative pointed out that Koike et al. (U.S. 5,635,903) does not teach or suggest that the pitch and volume of the second sound signal are variable *independently* of the pitch and volume of the first signal. The Examiner indicated that he would need to further review the disclosure of Koike et al.

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Koike et al. (U.S. 5,635,903) in view of Miller (U.S. 5,635,903). Claims 1 and 2 have been canceled.

New claim 3 recites:

> A sound synthesizer for generating a sound that simulates the sound of an internal combustion engine having a plurality of cylinders, the sound synthesizer comprising:
>
> a memory arranged to store engine sound data corresponding to at least one operational state of the engine based on a firing interval of the cylinders; and
>
> an output generator arranged to concurrently output first and second sound signals based on the engine sound data stored in the memory; wherein
>
> the output generator controls the first and second sound signals such that the first sound signal has at least one of a first pitch that is variable for each firing interval and a first volume that is variable for each firing interval, and **the second sound signal has at least one of a second pitch that is variable for each firing interval independently of the first pitch of the first sound signal and a second volume that is variable for each firing interval independently of the first volume of the first sound signal**. (emphasis added)

Support for new claim 3 can be found, for example, in original claim 1 and paragraphs [0037], [0038], and [0050] through [0052] of Applicant's specification and Fig. 6 of Applicant's drawings.

With the unique combination and arrangement of features recited in Applicant's claim 3, including the features of "the second sound signal has at least one of a second pitch is variable for each firing interval independently of the first pitch of the first sound signal and a second volume that is variable for each firing interval independently of the first volume of the first sound signal," Applicant has been able to provide a sound synthesizer that can output a more natural engine sound while using a small memory (see, for example, paragraphs [0051] and [0052] of Applicant's specification).

With respect to original claim 1, the Examiner alleged on page 3 of the outstanding Office Action that Koike et al. teaches "the second sound signal having at least one of: a second pitch that can be varied for each firing interval independently of the first pitch of the first sound signal (fig. 2a: 22; col. 6, lines 29-37)." The Examiner acknowledged that Koike et al. does not teach varying the firing interval independently of the first volume of the first sound signal, but alleged that "Miller does (col. 4, lines 58-68: multiple volume controls control the different amplifiers independently)." Applicant respectfully disagrees.

First, column 6, lines 29-37 of Koike et al. disclose variable oscillators 21, 22, 23 that may oscillate at different frequencies. However, Koike et al. does not teach or suggest that the variable oscillators 21, 22, 23 have frequencies that vary for *each* firing interval of a cylinder. Assuming *arguendo* that the frequency of an oscillator disclosed by Koike et al. corresponds to a firing interval of a cylinder, it is clearly shown in Figs. 2B and 2C of Koike et al. that the frequency of the oscillator 21 is consistent and does not vary, and the frequency of the oscillator 22 is consistent and does not vary. In other words, the pitch of the oscillator 21 in Fig. 2B of Koike et al. does *not* vary, and the pitch of the oscillator 22 in Fig. 2C of Koike et al. does *not* vary. Furthermore, Koike et al. is completely silent about varying the pitch of the oscillator 21 *independently* of the pitch of the oscillator 22.

Second, the Examiner referred to the embodiment of Fig. 2A of Koike et al. which discloses the oscillators as the simulated sound source 4 shown in Fig. 2 of Koike et al. Thus, there is no memory arranged to store the engine sound data since the oscillators 21, 22, 23 alone generate the sound data. As a consequence, the sounds generated by the oscillators of Koike et al. are not realistic since they are not based on real engine sound data.

In an alternative embodiment shown in Fig. 3 of Koike et al., a sound synthesizer 33 and sound data storage unit 34 comprise the simulated sound source 4 (see, for example, column 6, line 50 through column 7, line 13 of Koike et al.). However, this embodiment of Koike et al. does not use the variable oscillators in the embodiment shown in Fig. 2A. Thus, this embodiment of Koike et al. is completely silent about varying the pitch of a sound signal, and certainly does not teach or suggest independently varying the pitch of first and second sound signals.

Thus, Koike et al. clearly fails to teach or suggest the feature of "the second sound signal has at least one of a second pitch that is variable for each firing interval independently of the first pitch of the first sound signal and a second volume that is variable for each firing interval independently of the first volume of the first sound signal" as recited in Applicant's claim 3.

The Examiner relied upon Miller to allegedly cure deficiencies of Koike et al. However, Miller clearly fails to teach or suggest the feature of "the second sound signal has at least one of a second pitch that is variable for each firing interval independently of the first pitch of the first sound signal and a second volume that is variable for each firing interval independently of the first volume of the first sound signal," as recited in Applicant's claim 3. Thus, Applicant respectfully submits that Miller fails to cure the deficiencies of Koike et al. described above.

Accordingly, Applicant respectfully submits that Koike et al. and Miller, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicant's claim 3.

In view of the foregoing amendments and remarks, Applicant respectfully submits

that claim 3 is allowable. Claim 4 depends upon claim 3, and is therefore allowable for at least the reasons that claim 3 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a ONE-month extension of time, extending to December 31, 2007 (December 29, 2007 falls on a Saturday), the period for response to the Office Action dated August 29, 2007.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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